McGeorge Law Review

Volume 19 | Issue 4 Article 7

1-1-1988

Water Marketing in California

Kevin M. O'Brien
Downey, Brand, Seymour & Rohwer

Water Marketing in California

Kevin M. O'Brien*

I. INTRODUCTION

California is faced with an increasing water supply deficit. The State's estimated total net use of water in 1985 was 34.2 million acre-feet,[1] and annual net water needs are projected to reach 35.6 million acre-feet by 2010.[2] The prospects for new large-scale projects to develop additional supplies have been reduced due to a number of factors, including environmental considerations, growing construction costs and federal fiscal concerns.[3] Even if large-scale projects could be financed, the remaining surface supplies of the State that are both developable and uncommitted are relatively small.[4] As a result, California water policy has recently undergone a fundamental shift away from reliance on construction of new large-scale projects and toward a "wide variety of management actions designed to supplement, improve, and make better use of existing systems."[5]

---

* Associate, Downey, Brand, Seymour & Rohwer, Sacramento, California. A.B., University of California, Davis (1977); J.D., University of Denver (1980). The author gratefully acknowledges the assistance of Stephen J. McHugh for his research and analysis of water marketing legislation, and Anne J. Schneider for her comments on previous drafts of this article.

1. California Water: Looking to the Future, California Department of Water Resources Bulletin 160-87, 39 (November 1987) [hereinafter cited as DWR Bulletin 160-87].

2. *Id.* This figure assumes a leveling off of agricultural water use. Moreover, this estimate does not include water needed to correct existing long-term groundwater overdraft, currently averaging 2.0 million acre-feet per year, statewide. *Id.*

3. *See generally* Wilkinson, *Western Water Law in Transition*, 56 U. COLO. L. REV. 317, 328-34 (1985).

4. DWR Bulletin 160-87, *supra* note 1, at 39.

5. *Id.* The Bureau of Reclamation of the United States Department of the Interior has recently undergone a similar change in mission "from one based on federally supported construction to one based on effective and environmentally sensitive resource management." *See* ASSESSMENT '87 . . . A NEW DIRECTION FOR THE BUREAU OF RECLAMATION, UNITED STATES DEPARTMENT OF THE INTERIOR (1987).

While there is an emerging consensus that optimal utilization of existing water resources is an essential element of future California water policy, there is considerable disagreement as to how that policy should be implemented. Two principal approaches have emerged. On the one hand there is the regulatory approach, which seeks to achieve efficiency through the aggressive enforcement of limits on water use under state constitutional and statutory prohibitions against waste and unreasonable use.[6] On the other hand there is the market approach, which stresses the use of financial incentives in water allocation decision-making.[7] While the first approach is essentially coercive, the latter approach is voluntary. This article examines the latter approach.

Let us begin with definitions. The term "water marketing" is used in broad and often imprecise fashion. In a narrow sense, the term refers to the buying and selling of entitlements to water in a free market system, much like other commodities.[8] In a broader sense, the term refers to the innovative use of financial incentives in water resource management.[9] For purposes of this article, the term "water marketing" will be used to refer to the transfer, temporary or

---

6. *E.g.*, CAL. CONST. art. X, (1928, amended 1976). *See* Shupe, *Waste in Western Water Law: A Blueprint for Change*, 61 OR. L. REV. 483 (1982) (discussing this approach); *see also*, FINAL REPORT, GOVERNOR'S COMMISSION TO REVIEW CALIFORNIA WATER RIGHTS LAW 57-59 (December 1978) [hereinafter GOVERNOR'S COMMISSION REPORT].

7. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 59-60; *see generally* R. STAVINS, ENVIORNMENTAL DEFENSE FUND, TRADING CONSERVATION INVESTMENTS FOR WATER: A PROPOSAL FOR METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA TO OBTAIN ADDITIONAL COLORADO RIVER WATER BY FINANCING WATER CONSERVATION INVESTMENTS FOR IMPERIAL IRRIGATION DISTRICT (1983).

8. Examples of active water markets outside California can be found in Colorado's Northern Colorado Water Conservancy District, in the markets for groundwater in Arizona, and in a wide array of private arrangements that have arisen during times of drought. Howe, *Water as an Economic Commodity*, in WATER AND THE AMERICAN WEST (David H. Getches ed., 63) (NAT. RES. L. CENTER U. COLO. SCH. L. 1988).

9. A leading trade publication, in reviewing water marketing activity for the year 1987, had this to say:

> [W]ater marketing in the west and elsewhere is not simply the buying and selling of water entitlements. Water marketing can involve the financing of on-farm conservation measures in order to salvage water for additional use. It can mean innovative water banking in which surplus surface waters are stored underground during wet years for future exchange during droughts. Water marketing may involve a dry year option in which farmers agree to defer irrigation during droughts in return for monetary payments from thirsty cities. It can mean selling excess reservoir storage space or releasing dammed water to maintain downstream recreation and water quality. Water marketing can incorporate water rate structures to promote household conservation, and it can involve creative financing to purchase municipal supplies. Additional water marketing concepts are expected to arise from across the nation as water quantity and quality problems become increasingly acute. [citations omitted]

Water Market Update, Vol. 2 No. 1, at 1 (January 19—).

permanent, of water rights[10] from one purpose or place of use to another, without loss of priority.[11]

Why adopt a definition of "water marketing" that does not include the term "market"? In the author's view, there are inherent limits on the possibilities of a true commodity-type market for water rights in California.[12] At the same time, significant benefits can be derived from the introduction of market-like economic incentives into the water resources management system. What seems most likely to develop in California is a water allocation system which utilizes voluntary transfers but which retains features of the regulatory approach in order to ensure the adequate consideration of non-economic factors. Accordingly, the broader definition of "water marketing" set forth above will be utilized in this article.

As with many "new" ideas, the concept of water marketing has been around for quite some time.[13] To date, however, there have been relatively few concrete examples of water marketing in California,[14] despite widespread legislative activity in this area.[15] This lack

---

10. As used in this article, the term "water rights" includes both real property interests to the use of water conferred under state water law and contractual entitlements to the use of water. This discussion will focus on transfers involving appropriative water rights. The other major category of surface water rights in California, riparian rights, are seldom involved in transfers since such rights must be exercised on riparian lands. An interesting and complex topic not examined in this article is the transfer of rights to groundwater. *See generally* SCHNEIDER, GROUNDWATER RIGHTS IN CALIFORNIA: BACKGROUND AND ISSUES (1977) (Staff Paper No. 2 prepared for the Governor's Commission to Review California Water Rights Law).

11. This is similar to the definition adopted by the California Department of Water Resources in DWR Bulletin 160-87, *supra* note 1, at 52.

12. Other writers have come to similar conclusions. The final report of the National Water Commission, for example, acknowledges that the

> necessity of processing each water rights transfer through an administrative proceeding, the fact that no two water rights are identical, and the fact that there are few buyers and sellers, will prevent the development of a market in water rights comparable to the auction market of a stock or a commodity exchange.

NATIONAL WATER COMMISSION, WATER POLICIES FOR THE FUTURE 260 (1973) [hereinafter NATIONAL WATER COMMISSION REPORT].

13. *Id.* For previous discussions of water transfers see Weatherford, *Legal Aspects of Interregional Water Diversion*, 15 U.C.L.A. L. REV. 1299 (1968); C. MEYERS & R. POSNER, MARKET TRANSFERS OF WATER RIGHTS: TOWARDS AN IMPROVED MARKET IN WATER RESOURCES (National Water Commission Legal Study No. 4, 1971) [hereinafter MEYERS & POSNER]; LEE, THE TRANSFER OF WATER RIGHTS IN CALIFORNIA, STAFF PAPER NO. 5, GOVERNOR'S COMMISSION TO REVIEW CALIFORNIA WATER RIGHTS LAW (December 1977) [hereinafter LEE].

14. The most widely discussed example of water marketing in California is the proposed transaction between the Imperial Irrigation District (IID) and the Metropolitan Water District of Southern California (MWD), which involves the financing of improvements in IID's water system by MWD in return for a portion of the water saved by the improvements. *See*, Dunning, *The Physical Solution in Western Water Law*, 57 U. COLO. L. REV. 445, 479-83 (1986). As of this writing no agreement had been reached despite more than three years of negotiations. For a description of more successful water marketing efforts see LEE, *supra* note 11, at 57-

of action reflects the complexities involved in implementing a water marketing scheme on a case-specific basis. This complexity stems from five key factors: (1) the nature of the resource itself, which is both fugitive and highly variable; (2) the interdependence of users within a particular water system and the concomitant potential for third party impacts from water transfers; (3) the existing system of law, including the law of water rights, water quality, special districts and reclamation, and the provisions of existing water supply contracts; (4) the political environment in which water allocation decisions are made; and (5) the pervasive influence of the State's two massive water projects, the Central Valley Project (CVP), operated by the United States Bureau of Reclamation (Bureau), and the State Water Project (SWP), operated by the California Department of Water Resources (DWR).[16]

As a result of this complexity, agencies and water users in California have generally evidenced a cautious approach toward water marketing.[17] Nonetheless, it seems likely that the use of economic incentives toward the goal of optimal utilization of existing water resources will play a significant role in meeting California's future water needs.[18] The issue, of course, is how significant that role will be. This article seeks to define that role by examining the barriers to water marketing that exist in the State; reviewing past legislative attempts to facilitate water marketing; and making recommendations for future legislation that would remove unnecessary barriers while at the same time protecting legitimate interests.

II. Barriers to Water Marketing in California

Barriers to water marketing may arise from legal, economic, institutional, political, and physical forces. For purposes of simplicity, such barriers can be grouped into two general types. The first type of barrier is a direct prohibition contained in state or federal law,

---

70, and Quinn, *Water Exchanges and Transfers to Meet Future Water Demands in Southern California*, in Water Marketing: Opportunities and Challenges of a New Era (Steven J. Shupe ed., 5-34) (U. Denver C.L.) (1986) [hereinafter Quinn]. Finally, for a compilation of water transfer proposals see Draft Report, *A Catalog of Water Transfer Proposals*, Water Transfers Committee, California Department of Water Resources (September 1986) [hereinafter *DWR Catalog*].

15. *See infra* notes 134-78 and accompanying text.

16. See 1 Rogers & Nichols, Water for California, at 20-115 (1967) (describing the two projects and some of the complexities they create).

17. *See, e.g.*, DWR Bulletin 160-87, *supra* note 1, at 53.

18. *Id.*

or in a water supply contract, which precludes water marketing in a particular case. The second type of barrier is more insidious. These barriers affect water marketing schemes by creating economic disincentives to the pursuit of transfer plans. Such indirect barriers include legal restrictions that increase the transactional costs of transfers (as, for example, statutes that require administrative approval of a transfer and the concomitant expenditure of legal and expert witness fees).[19] This category also includes features of existing law that impair the legal certainty of the water right to be conveyed.[20]

This section examines the key legal barriers to water marketing in California. This discussion does not purport to be exhaustive; in a given case additional barriers may arise as a result of constraints unique to the transfer project. The purpose of this discussion is to point out the more pervasive and potentially significant legal impediments that may affect a water marketing proposal.

A. The "No Injury" Rule and the Problem of Defining the Amount of Water Available for Transfer

In California, as in other western states, the holder of a state-granted appropriative water right may change the point of diversion, place of use, or purpose of use from that specified in the water right, but only upon permission of the State Water Resources Control

---

19. See B. Saliba & D. Bush, Water Markets in Theory and Practice: Market Transfers, Water Values and Public Policy (1987) (discussing economic aspects of the establishment of water markets).

20. *See, e.g.*, GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 62-63. A leading proponent of water marketing, Thomas J. Graff, had this to say about the impediments to water marketing created by the public trust doctrine:

> Judicial implementation of a public trust doctrine to protect environmental resources diminishes the certainty with which private property interests in water are held. If appropriators of water from a stream are forever subject to the open-ended possibility that a court or a regulatory authority may seek to take back that appropriated water to protect that instream value which that diversion may be threatening, the appropriative right, which may long have been thought by its holder to be a vested right, may turn out instead to be an illusory right. Moreover, the uncertainty which is engendered by the possibility that the public trust doctrine will be invoked may well make the transfer of that appropriate right less likely and it certainly will make the right less valuable. A potential buyer seeking a new water supply may well be deterred from paying the transaction costs of negotiating a water purchase if his prospective supply is subject to a higher and non-compensating use, thus possibly precluding a more efficient use for the water.

Graff, *Environmental Quality, Water Marketing and the Public Trust: Can they Coexist?*, 5 UCLA J. ENVTL. L. & POL'Y 137, 140 (1986). The author recommends "an effort to integrate the economist's interest in efficiency with the environmental lawyer's advocacy of judicial and bureaucratic preservationist doctrine." *Id.* at 141.

Board (SWRCB).[21] Before permission to make such a change will be granted, the petitioner must establish that the change "will not operate to the injury of any legal user of the water involved."[22]

The "no injury" rule, in effect, gives an appropriator "a vested right in the stream regime that exists at the time the appropriation is initiated."[23] This statutory protection stems from the fact that water is a shared resource. On a typical watercourse, the amount of water consumptively used is relatively small in relation to the quantity of water diverted; water that is not consumptively used will make its way back to the watercourse as return flow. Other water users, junior in priority, will make investment decisions in reliance on historical return flows upstream. Accordingly, when a change in place or purpose of use reduces the return flow relied upon by downstream users, the courts have enjoined the change.[24] These rules apply regardless of whether the change is caused by the transfer of a water right from one user to another, or merely a modification in the method of use by the existing right holder.[25]

While upstream diverters must generally respect the rights to return flow vested in downstream users,[26] California courts have created two major exceptions to this general rule. First, when the water is

---

21. CAL. WATER CODE § 1701 (West 1971).

22. *Id.* § 1702. *See generally* Gould, *Conversion of Agricultural Water Rights to Industrial Use*, 27 ROCKY MTN. MIN. L. INST. 1791 (1982) (comprehensive examination of the "no injury" rule) [hereinafter Gould].

23. Gould, *supra* note 22, at 1821. Professor Gould points out that an appropriator is not protected from all changes to the stream regime. *Id.* at 1821 n. 136. *See infra* notes 27-28 and accompanying text.

24. *E.g.*, Scott v. Fruit Growers Supply Co., 202 Cal. 47, 55, 258 P. 1095, 1098 (1927) (change in place of use enjoined).

25. *See, e.g.*, Peoples Ditch Co. v. Foothill Irrigation Dist., 112 Cal. App. 273, 278, 297 P. 71, 73 (1931). Where a water marketing plan does not involve a change in purpose or place of use, but merely an extension or variance in the original use (for example, a change in cropping patterns), two rules may apply. First, the prior appropriator's right to increase his use of water gradually, if clearly expressed by the original appropriation and exercised with reasonable diligence, is not viewed as an enlargement of the original right and will be allowed as against junior appropriators of return flow. *See*, Haight v. Costanich, 184 Cal. 426, 194 P. 26 (1920). Second, when the prior appropriator's extension of his original use is beyond the original appropriative intent or is not pursued with diligence, and junior appropriative rights have intervened, such junior rights will generally be protected. Nevada Water Co. v. Powell, 34 Cal. 109, 118-19 (1867). *See generally* W. HUTCHINS, THE CALIFORNIA LAW OF WATER RIGHTS 158 (United States Department of Agriculture 1956) [hereinafter W. HUTCHINS].

26. *See* Smith v. O'Hara, 43 Cal. 371, 375, (1872) (where prior appropriator diverts only portion of supply, "another person may appropriate a part or the whole of the residue; and when appropriated by him his right thereto is as perfect, and entitled to the same protection, as that of the first appropriator . . . ."). Nonetheless, the State Water Resources Control Board (SWRCB) routinely includes a term in water rights permits which states: "To the extent that water available for use is return flow, imported water, or wastewater, this permit shall not be construed as giving any assurance that such supply will continue." S.W.R.C.B. Permit Term Index, Term No. 25.

imported water (water foreign to the watershed) and is recaptured by the upstream user within his land or irrigation works, the upstream user may transfer the water right even to the detriment of downstream users who rely on return flow therefrom.[27] Second, when the upstream diverter releases return flow with the prior intention of subsequently recapturing the water, the courts have allowed the upstream user to transfer the water right without considering the impact on downstream users.[28]

The "no injury" rule has been criticized by some commentators as an unnecessary impediment to water transfers.[29] Others support the rule, arguing that it promotes complete utilization of water resources by providing security to users of return flow, and by requiring senior appropriators to consider the value of uses made by junior appropriators.[30]

Absent a drastic overhaul of California's water rights law, the "no injury" rule will remain a potential barrier to water marketing. The rule provides important protections to those who have relied on historic return flow patterns. There are, however, a number of refinements to the "no injury" rule which can be adopted to facilitate water marketing, without significantly impairing the rights of persons who rely on return flow. The rationale for these refinements is discussed here and the specific proposal is examined in Part IV.

1. Defining "Injury"

Nowhere does the California Water Code define "injury" as it is used in the "no injury" rule. Based on the language of the statute,

---

27. Stevens v. Oakdale Irrigation Dist., 13 Cal. 2d 343, 352, 90 P.2d 58, 62-63 (1939). Two reasons are generally advanced for this rule: "First, the water exists only because of the efforts of the importer and, thus, the importer should reap the full benefit of his efforts. Second, the importer is always free to terminate the importation of water, thereby depriving other appropriations of it." Gould, *supra* note 22, at 1847.

28. *See* Los Angeles v. San Fernando, 14 Cal. 3d 199, 256-58, 537 P.2d 1250, 1292-93 (1975). In this case, over 40% of the safe yield of groundwater from the San Fernando Basin was found to have been derived from water imported from outside the Los Angeles River watershed; recharge resulted largely from return flow attributable to delivered imported water. Los Angeles claimed a prior right to the groundwater attributable to return flow from imported water. The court upheld Los Angeles' claim, relying principally on *City of Los Angeles v. City of Glendale*, 23 Cal. 2d 68, 77-78, 142 P.2d 289, 295 (1943). *Glendale* upheld Los Angeles' claim to prior rights to groundwater beneath the San Fernando Valley on the "dual basis" of (1) a showing by Los Angeles of an intent to recapture return waters before importation began; and (2) the fact of importation itself. Given that imported water was involved in both cases, it is not entirely clear whether the manifestation of a prior intention to recapture *non*-imported water would suffice to negate the "no injury" rule.

29. *E.g.*, Sax & Abrams, Water Law Cases and Commentary 207 (1965).

30. Meyers & Posner, *supra* note 13, at 27.

"if there is any injury to a legal user, regardless of how small such injury might be, SWRCB must deny the petition for change."[31] In its Final Report, the Governor's Commission to Review California Water Rights Law recommended that the SWRCB be authorized to approve long-term transfers when any change would not result in "substantial injury" to any other water user.[32] This recommendation has been adopted by the legislature with respect to some, but not all, changes in point of diversion, place of use or purpose of use.[33]

A good deal of the uncertainty surrounding the operation of the "no injury" rule stems from ambiguity concerning the precise amount of water to which an appropriator obtains a right when he diverts water and applies it to beneficial use. The most frequent type of injury that can result from a change in use is an increase in consumption, that is, a reduction in the quantity of return flow water available to others using water from the watercourse.[34] An increase in consumption may result, for example, from a change to a new purpose of use which consumes a greater percentage of water than the former use or from a transfer of water to a different watershed (in which case the new use would be 100% consumptive).[35]

Computing the consumption of the use being changed has been described by one commentator as "a difficult problem [which] creates a serious impediment to the transfer of water rights."[36] Appropriative water rights are generally defined in the water right permit or license in terms of a maximum flow rate (such as cubic feet per second) or, in the case of storage rights, a volumetric limit (such as acre-feet per year). The issue of how much water a rightholder has available for transfer is a mixed question of engineering and law.[37]

As discussed more fully in Part IV of this article, one partial solution to the uncertainties created by the "no injury" rule is to

---

31. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 67.

32. *Id.* Under the Commission's proposal, any water user whose injury was less than "substantial" would retain the right to an action for damages. *Id.*

33. The "substantial injury" standard has been adopted in the context of petitions for "long-term transfer" where the SWRCB has previously approved a "trial transfer." CAL. WATER CODE §§ 1737, 1738 (West Supp. 1988).

34. Gould, *supra* note 22, at 1823. Other types of injury include increases in stream conveyance losses, increases in periods of diversion, changes in patterns and location of return flows and changes in water quality. *Id.* at 1823-41.

35. *Id.* at 1824.

36. *Id.* at 1825.

37. The engineering analytic techniques used to quantify yield are beyond the scope of this article. *See* Blaney & Criddle, *Determining Water Requirements for Settling Water Disputes*, 4 NAT. RESOURCES J. 29 (1964) (for a discussion of one of these techniques).

adopt a statute which provides that only consumptive use may be transferred, and which defines consumptive use in a concise fashion. In most instances, such a rule would protect other legal users of the transferred water. In instances when other users would be adversely affected by a transfer,[38] the SWRCB should be given express statutory authority to impose a "physical solution" whereby the injured user can be compelled to accept a substituted source of water or a modification of his means of diversion, distribution, or use of water, at the transferring party's expense.[39]

2. *Salvage Rights*

One final area in which the "no injury" rule arises is the marketing of "salvage" water—water saved by the implementation of conservation measures to reduce the amount of water "lost" due to seepage, percolation, evapotranspiration, or evaporation.[40] The marketing of such water has been an issue of great debate in California. Salvage water, for example, is the basis for the proposed water marketing transaction between Imperial Irrigation District and Metropolitan Water District.[41]

The problem is that once the salvage is made, a junior appropriator who has regularly not been getting all the water she needs under her appropriation may claim that the salvaged water "belongs to the stream" rather than to the salvager.[42] The basis for the junior's argument is that the senior is only entitled to the water that historically has been beneficially applied to use. It is clear, according to

---

38. In his article, Professor Gould examines situations in which the suggested solution would not fully protect other legal users. Gould, *supra* note 22, at 1837-38.

39. Such authority probably exists under existing case law. *See, e.g.*, Rancho Santa Margarita v. Vail, 11 Cal. 2d 501, 559, 81 P.2d 533, 562 (1938) ("[I]t is not only within the power, but it is the duty of the trial court, to work out, if possible, a physical solution, and if none is suggested by the parties to work out one independently of the parties."). Nonetheless, in the author's view, express statutory authority to impose physical solutions would facilitate water transfers. *See* note 183-84 and accompanying text.

40. Strictly speaking, water that seeps or percolates into soil is not "lost" from use to the extent that it is available for use by others. For example, seepage from irrigation use often becomes available for use by groundwater pumpers. Seepage or percolating water may become irrecoverable, however, due to impairment of quality. A common example is agricultural water lost to saline sinks. *See generally* IRRIGATION WATER USE IN THE CENTRAL VALLEY OF CALIFORNIA (REPORT OF THE CENTRAL VALLEY WATER USE STUDY COMMITTEE 1987).

41. *See supra* note 14. A significant, and as yet unresolved, issue is whether Imperial Irrigation District still owns the right to transfer water lost in transmission, in view of the termination made by the SWRCB and upheld by the courts that the District is engaged in unreasonable use in violation of California Constitution article X, section 2. *See*, Imperial Irr. Dist. v. State Water Resources Control Bd., 186 Cal. App. 3d 1160, 231 Cal. Rptr. 283 (1986).

42. *See, e.g.*, Bower v. Big Horn Canal Ass'n, 77 Wyo. 80, 307 P.2d 593 (1957).

the junior's argument, that the senior is entitled to use some additional water for transmission or evaporation over and above his consumptive needs, assuming a reasonable method of diversion.[43] But the junior will argue that once it is shown that the senior does not need that water, the water formerly lost in transit or to evaporation must go back to the stream for use by the next appropriator in order of priority.

The difficulties raised by salvage operations are summarized by one commentator as follows:

> The senior, while admitting the formal rationality of the junior's argument, responds that any such rule is ridiculous. If implemented, it would remove any incentive for a senior to improve his leaky ditches, since he would then get nothing for his investment. Such a rule, says the senior, is entirely contrary to the policy of all arid states that water should be put to maximum use. Only by giving seniors such as himself incentives to improve their ditches can such a policy be implemented. The junior replies that, on the contrary, to permit the senior to benefit by such salvage is only to encourage wasteful uses, since the more water an appropriator takes from the stream, however wasteful his transmission or use may be, the better off he will be since he can always later salvage and obtain the benefit of an early appropriation date for all he has taken.[44]

The general rule is that one who makes salvage water available by his own efforts is entitled to use such water, provided that in doing so he is not infringing upon the prior rights of others.[45] Under existing California law, it is unclear whether a salvager must obtain a permit from the SWRCB before using salvage water.[46] It is also unclear what priority a salvager would receive.[47] The present practice is to grant salvagers permit and license rights, subject to claims by senior users.[48]

The Governor's Commission recommended that salvagers "be granted a right to the water they have salvaged superior to all users

---

43. Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist., 3 Cal. 2d 489, 546-47, 45 P.2d 972, 997 (1935).

44. SAX & ABRAMS, LEGAL CONTROL OF WATER RESOURCES 351 (West 1986). *See generally* Clark, *Background and Trends in Water Salvage Law*, 15 ROCKY MTN. MIN. L. INST. 421 (1969).

45. W. HUTCHINS, *supra* note 25, at 383-85.

46. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 61.

47. *Id.* "A salvager could receive a priority junior to senior users along the stream or a priority superior to all other users. If the salvager receives a junior priority, there would be much less incentive to conserve water . . . ." *Id.*

48. *Id.*

along the stream."[49] The Commission also recommended that any legislation provide that the salvage effort "could not injure any lawful user of surface water or groundwater and could not unreasonably affect fish, wildlife or other instream beneficial uses."[50] To date, no legislation has been adopted which comprehensively addresses the salvage problem.[51]

As discussed in Part IV, legislation is needed to create economic incentives for water conservation while at the same time protecting those legal users who rely on seepage or other "waste" to satisfy their water needs. A starting point for such legislation would be a statutory definition of the "no injury" rule as it applies in the salvage context. For example, should a groundwater pumper who derives some benefit from a leaking ditch due to an aquifer recharge have standing to complain that the lining of the ditch has "injured" him simply because his pumping costs have increased? Should that same pumper have the power to enjoin the transfer of salvaged water? As in the case of the "no injury" rule in other transfer proceedings, legislation is needed to encourage the adoption of physical solutions in order to mitigate the impact of salvage operations.

B. Area of Origin Protections

California, like other western states, has adopted statutes commonly known as area of origin statutes that place limitations on interbasin transfers. Interestingly, these statutes apparently represent a legislative response to the absence of an effective market for pricing water.[52] Uncertainty as to the nature and extent of the protections

---

49. *Id.*
50. *Id.*
51. The legislature has adopted a statute which provides that
> [w]hen any person entitled to the use of water under an appropriative right fails to use all or any part of the water because of water conservation efforts, any cessation or reduction in the use of such appropriated water shall be deemed equivalent to a reasonable beneficial use of water to the extent of such cessation or reduction in use.

CAL. WATER CODE § 1011(a) (West Supp. 1988). This provision, while an aid to conservation, does not create economic incentives for water conservation, nor does it address the difficult issues raised by the salvage problem.
52. In its final report, the National Water Commission stated:
> Area-of-origin protection is peculiarly associated with water. Other resources are not similarly treated, probably because they are priced in conventional markets. For coal, oil, copper, timber, and other natural resources, the area of origin receives its "protection" in the form of taxes and revenues from the "export" of the resource. In the absence of a pricing system for the export of water, area-of-origin interests have resorted to the political process to obtain "in kind" protection, that is,

imposed by area of origin statutes creates a significant potential barrier to water marketing proposals involving interbasin transfers.

The development of area of origin protections in California is closely associated with the history of the State's two major water projects. In 1927 the legislature adopted the Feigenbaum Act, which authorized the State to file for unappropriated water which might be needed to meet a general water resources development plan.[53] The principal effect of the Feigenbaum Act was to withdraw unappropriated "state filing" water from any further appropriation by private parties.[54]

In response to concerns voiced by counties from which the water projects would transfer water, the Feigenbaum Act was amended in 1931 to include protections for counties of origin.[55] This statute, the first in a series of efforts to protect areas of origin in California, sought to protect the future interests of the counties of origin by restricting the state's authority to dispose of the priorities it had obtained under the Feigenbaum Act.[56]

The next step in the development of area of origin protections in California came in 1933 with the adoption of the Central Valley Project Act.[57] This act contains a provision which is commonly known as the Watershed Protection Act. It provides:

> In the construction and operation by the department of any project under the provisions of this part a watershed or area wherein water originates, or an area immediately adjacent thereto which can conveniently be supplied with water therefrom, shall not be deprived by the department directly or indirectly of the prior right to all the water reasonably required to adequately supply the beneficial needs

---

enactment of laws reserving water for the area's "ultimate requirements" or providing for recapture in the event of future need. As a consequence of this approach, safeguards for a water exporting area have usually been tied to future or potential water development in the area.

NATIONAL WATER COMMISSION REPORT, supra note 12, at 323; *see also* MacDonnell & Howe, *Area-of-Origin Protection in Transbasin Water Diversions: An Evaluation of Alternative Approaches*, 57 U. COLO. L. REV. 527, 528 (1986) [hereinafter MacDonnell & Howe].

53. 1927 Cal. Stat. ch. 286, secs. 1-2, at 508-10 (codified as amended at CAL. WATER CODE §§ 10500-10507 (West 1971 & Supp. 1988).

54. 25 Op. Cal. Att'y Gen. 8, 11 (1955); LEE, *supra* note 13, at 37.

55. This amendment, as subsequently revised, provides: "No priority under this part shall be released nor assignment made of any application that will, in the judgment of the board, deprive the County in which the water covered by the application originates of any such water necessary for the development of the County." CAL. WATER CODE § 10505 (West 1971).

56. 25 Op. Cal. Att'y Gen. 8, 15 (1955); LEE, *supra* note 13, at 38.

57. 1933 Cal. Stat. ch. 1042 (codified as amended at CAL. WATER CODE §§ 11100-11985 (West 1971 & Supp. 1988)). The Central Valley Project Act was later incorporated by reference into the Burns-Porter Act of 1959. CAL. WATER CODE § 12931 (West 1971).

> of the watershed, area, or any inhabitants or property owners therein.[58]

The Watershed Protection Act creates a paramount and preferential right to the use in the future of state filing water within the watershed of origin or areas "immediately adjacent thereto which can conveniently be supplied with water therefrom." No definable property right is created or presently vested in any particular individual; as to any prospective user within the area of origin the grant of the statute is wholly inchoate.[59]

The inchoate right is unqualified; its potential maximum is the ultimate need for water which can be beneficially used up to the capability of the watershed.[60] Procedurally, if an inhabitant of a protected area develops a need for additional water, he must still apply for and perfect the appropriative right as required under existing appropriation procedures. However, the application cannot be denied or restricted because of water usage by the state.[61]

The next step in the development of area of origin protections in California came in 1959 with the adoption of the Delta Protection Act.[62] This Act includes a legislative finding that:

> the maintenance of an adequate water supply in the Delta sufficient to maintain and expand agriculture, industry, urban, and recreational development in the Delta area . . . and to provide a common source of fresh water for export to areas of water deficiency is necessary to the peace, health, safety and welfare of the people of the State . . . . [63]

The Delta Protection Act incorporates by reference the county of origin and watershed protection statutes,[64] and declares the policy of the state "that no person, corporation or public or private agency or the state or the United States should divert water from the channels of the Sacramento-San Joaquin Delta to which the users within said Delta are entitled."[65]

The final step in the development of area of origin protections came in 1984, with the adoption of statutes for so-called "protected

---

58. CAL. WATER CODE § 11460 (West 1971).
59. 25 Op. Cal. Att'y Gen. 8, 21 (1955).
60. *Id.*
61. *Id.*
62. CAL. WATER CODE §§ 12200-12227 (West 1971 & Supp. 1988).
63. *Id.* § 12201.
64. *Id.*
65. *Id.* § 12203. *See id.* § 12220 (West 1971) (setting forth the boundaries of the Delta for purposes of the Act).

areas."[66] Under these statutes a designated "protected area,"[67]

> shall not be deprived directly or indirectly of the prior right to all the water reasonably required to adequately supply the beneficial needs of the protected area . . . by a water supplier exporting or intending to export water for use outside a protected area pursuant to applications to appropriate surface water filed, or groundwater appropriations initiated, after January 1, 1985, that are not subject to [Water Code] Section 11460.[68]

In addition to the right to obtain a water right that would have priority over the rights of an exporter, the statute gives water users in protected areas "the right to purchase, for adequate compensation, water made available by the construction of any works by a water supplier exporting or intending to export water for use outside the protected area."[69] The statute also creates a mechanism for mediation of disputes involving the purchase of export water.[70] Because this statute applies only to applications to appropriate filed after January 1, 1985, it is of limited significance.

What is the likely impact of area of origin statutes on water marketing in California? To a large extent, the impact remains uncertain due to the ambiguity of the statutes themselves.[71] Three principal areas of uncertainty exist: (1) which geographic areas are covered by the area of origin protections; (2) can the protections be successfully applied against the state and federal governments in equal measure; and (3) what specific protections are provided by these statutes?

As to the first issue, while counties of origin and watersheds are relatively discreet geographic areas, the extension of protection to areas "immediately adjacent" to the watershed or area of origin "or an area immediately adjacent thereto which can conveniently be supplied with water therefrom"[72] creates significant uncertainties. To date, these uncertainties have not been resolved.[73]

---

66. CAL. WATER CODE §§ 1215-1222 (West 1971 & Supp. 1988).
67. CAL. WATER CODE § 1215.5 (West Supp. 1988) (identifying protected areas).
68. *Id.* § 1216.
69. *Id.* § 1217(a). This provision is consistent with previous interpretations of other area of origin statutes.
70. *Id.* § 1219.
71. LEE, *supra* note 13, at 40.
72. CAL. WATER CODE § 11460 (West 1971).
73. *See* Fresno v. California, 372 U.S. 627 (1963) (holding that four county, multiple watershed areas were entitled to preference under the Watershed Protection Act for Bureau of Reclamation water from Friant Dam). *See also* 25 Op. Cal. Att'y Gen. 8, (1955) (suggesting that contiguity to the watershed should be the applicable test).

On the issue of whether the area of origin statutes apply as against the federal government, the answer appears to be a qualified yes. Under the most recent information of the preemption doctrine, as applied in the water rights context, state imposed water rights restrictions are not preempted by federal law unless inconsistent with congressional directives.[74]

The level of protection afforded by the area of origin statutes is likewise uncertain. This issue may ultimately be answered as a result of the ongoing proceedings concerning the development and implementation of water quality standards for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. A significant, and as yet unanswered, issue is the degree to which the reasonable use requirements of California Constitution article X, section 2 supersede the protections of the area of origin statutes.

To the extent that uncertainty creates a disincentive to water marketing, California's area of origin statutes will tend to impair, if not block, interbasin transfers. This is not to say that areas of origin should not be subject to statutory protections. Indeed, there are compelling economic reasons why some form of area of origin protection should accompany any water marketing proposal.[75] The issue, simply stated, is how to assure that costs to the area of origin associated with an interbasin transfer are adequately considered. In a pure market situation, such externalities are almost surely to be ignored.[76] If California is to adopt a more market-oriented system of water resources allocation, it is essential that the State develop a mechanism for estimating all costs to the area of origin of a particular interbasin transfer and a means for requiring the exporter to compensate the area of origin through monetary or other forms of payment. Part IV of this article briefly examines possible compensation measures.

C. *Barriers Arising Under Federal Reclamation Law*

A significant portion of California's water supply is controlled by the Bureau of Reclamation of the United States Department of the

74. California v. United States, 438 U.S. 645 (1978). In an early examination of this issue, the California Attorney General opined that Water Code sections 11460 and 11463 are applicable to the United States in its operation of the Central Valley Project, but that compliance is dependent upon whether the United States has "affirmatively elected" to comply with state law in this respect. 25 Op. Cal. Att'y Gen. 8, 27-29 (1955).

75. MacDonnell & Howe, *supra* note 52, at 536-37.

76. *Id.*

Interior (Bureau).[77] To date, however, the policy of the Bureau toward voluntary transfers of Bureau water[78] has been uncertain. If water marketing is to play a significant role in California's water allocation system, the federal government must adopt policies that clarify the standards that govern voluntary transfers of Bureau water.[79]

The transfer of Bureau water is a complex subject.[80] This complexity stems from the fact that entitlements to Bureau water arise from both contract and property law and are subject to both federal and state law constraints. The purpose of this brief discussion is to note the key issues involved in the transfer of Bureau water.

1. Overview of Federal Reclamation Law

Under the authority of the Reclamation Act of 1902,[81] the Bureau has built large-scale projects for the storage and delivery of water throughout the West.[82] The Bureau is estimated to supply about

---

77. According to DWR estimates, federally-controlled sources of supply from the Central Valley Project, Colorado River and other federal sources accounted for 39% of statewide net water use in 1985. DWR Bulletin 160-87, *supra* note 1, at 40.

78. The term "Bureau water" is used in this article to refer to water supplies developed by the Bureau of Reclamation pursuant to state-granted appropriative water rights, and contractual entitlements to such water.

79. While not technically within the realm of water marketing, the Bureau is in the process of formulating policy in two areas which may ultimately affect the development of water marketing in California. By way of background, the Bureau suspended the execution of new Central Valley Project (CVP) water supply contracts in 1979 until federal and state responsibility for water quality in the Sacramento-San Joaquin River Delta could be clarified. Subsequent studies on this issue resulted in a Coordinated Operation Agreement (COA) for coordinated operation of the CVP and the State Water Project (SWP). The COA was executed by the parties on May 20, 1985, and approved by Congress in 1986. Pub. L. No. 99-546, § 103 (1986).

After a nine-year moratorium on new Bureau contracts, the Bureau recently proposed to resume long-term contracting of uncommitted CVP water supplies; this proposal is currently in the environmental review process. *See* "Central Valley Project Water Contracting Environmental Impact Statements (EICs), Fact Sheet No. 1" (U.S. Department of the Interior, October 1987) (copy on file with author). In addition, negotiations are currently ongoing pursuant to section 10(h) of the COA, which provides in relevant part that DWR and the Bureau "shall promptly commence negotiating a contract for the conveyance and purchase of Central Valley Project water to assist each party in making more efficient use of the water project facilities and water supplies contemplated in this agreement. . . ." COA § 10(h)(1).

80. *See generally* Roos-Collins, *Voluntary Conveyance of the Right to Receive a Water Supply from the United States Bureau of Reclamation*, 13 ECOLOGY L.Q. 773 (1987) [hereinafter Roos-Collins]; Driver, *The Effect of Reclamation Law on Voluntary Water Transfers*, 33 ROCKY MTN. MIN. L. INST. 26-1, (1988) [hereinafter Driver] (for comprehensive discussions of this subject).

81. Reclamation Act of 1902, ch. 1093, 32 Stat. 388 (codified as amended at 43 U.S.C. § 371.600e (1982 & Supp. III 1985)).

82. For a detailed history of the reclamation program see SAX, FEDERAL RECLAMATION LAW, 2 WATERS AND WATER RIGHTS, ch. 8, at 111-291 (Clark, ed. 1967).

twenty-three percent of the water applied for consumptive use purposes in the West.[83]

The Bureau holds state-granted appropriative water rights for the operation of federal reclamation projects. Title to project water rights is held by the Bureau as trustee, subject to the beneficial interest of the ultimate project customers.[84] Bureau water used for irrigation purposes is typically sold by the Bureau to a contracting irrigation district, rather than directly to farmers.[85] The Bureau and the contracting district are each an "intermediary agent" for the farmers.[86] When, as in the typical case, the contracting district does not own its own storage facilities, but instead receives water directly from a federal project, the Bureau retains legal title to the project and its associated water rights and the district holds "an equitable interest in the project, as defined by its contract, in trust for its irrigators, who in turn have equitable shares of the district's interest."[87]

There are three principal types of Bureau contracts. A "9(d)" or "repayment contract"[88] provides that the contracting district will repay an appropriate share of the project's annual operating costs in advance of annual deliveries, and that it will repay the district's share of all construction costs allocated to irrigation in annual installments over a term of not more than forty years, plus a development period of not more than ten years. Once repayment of capital is completed, the district obtains "a first right (to which right the rights of the holders of any other type of irrigation water contract shall be subordinate) to a stated share or quantity of the project's available water supply . . . subject to payment of an appropriate share of such costs, if any, as may thereafter be incurred by the United States in its operation and maintenance of the project works. . . ."[89]

---

83. Driver, *supra* note 80, at 26-3 n.4.

84. *See* Nevada v. United States, 463 U.S. 110, 124 (1983).

85. The Reclamation Act is not without ambiguity as to the type of entity that is allowed to contract with the Bureau for irrigation water. The original Reclamation Act authorized contracts between the Bureau and individual irrigators. 43 U.S.C. §§ 419, 461 (1982). In 1926 the Bureau was limited to contract thereafter only with "irrigation districts organized under State law." 43 U.S.C. § 423e (1982). Finally, the Reclamation Project Act of 1933 broadened the category of contracting parties to include "any conservancy district, irrigation district, water users' association, or other organization which is organized under State law and which has capacity to enter into contracts with the United States pursuant to the Federal reclamation laws." 43 U.S.C. § 485a(g) (1982).

86. Murphy v. Kerr, 296 F. 536, 545 (D.N.M. 1923).

87. Roos-Collins, *supra* note 80, at 835.

88. These contracts derive from the Act of August 4, 1939, ch. 418, § 9(d), 53 Stat. 1187, 1195 (codified at 43 U.S.C. § 485h(d) (1982)).

89. *Id.* § 485h-1(4) (1982).

The second type of Bureau contract is a "9(e)" or "water service" contract.[90] Under a water service contract, the repayment rate must cover an appropriate share of the project's operating and maintenance costs and only that share of construction costs which the Secretary of Interior "deems proper."[91] A water service contract may be for a term of up to forty years.[92]

The final category of Bureau contracts is the so-called "Warren Act" contract. The Warren Act of 1911 authorizes the Secretary of the Interior to store water under privately held water rights for persons who would otherwise not receive project rights.[93] There are two types of Warren Act contracts. Under a so-called "Section 1" contract, the contractual term is contingent upon the availability of excess capacity and cannot extend beyond the surplus.[94] The Secretary is required to "preserve a first right to lands and entrymen under the project."[95] A Section 1 contract "may provide for temporary deliveries pending full development of lands within the project, or it may expressly indicate that the 'rental' of water is secondary and inferior to the right to use the water within the project boundaries."[96]

The other type of Warren Act contract is a so-called "Section 2" contract.[97] Under its Section 2 contracting authority, the Bureau may authorize a private party, holding a state-granted water right, to construct storage or delivery capacity in excess of that needed for regular project customers. This capacity can then be incorporated into the federal project. Alternatively, a private party may simply contract with the United States for construction of additional capacity.[98] Thus, unlike Section 1 contracts, Section 2 contracts do not make the contract's right to the use of project facilities secondary to other project lands or entrymen.

2. *Barriers to Water Marketing Involving Bureau Water*

The Reclamation Act does not expressly authorize or prohibit the conveyance of Bureau rights from an original contractor to a second

---

90. These contracts derive from the Act of August 4, 1939, ch. 418, § 99(e), 53 Stat. 1187, 1196 (codified at 43 U.S.C. § 485h(e) (1982)).
91. *Id.*
92. *Id.*
93. 43 U.S.C. §§ 523-524 (1982) (original version at ch. 141, 36 Stat. 925 (1911)).
94. Roos-Collins, *supra* note 80, at 838.
95. 43 U.S.C. § 523.
96. Roos-Collins, *supra* note 80, at 838.
97. These contracts derive from the Warren Act of 1911, ch. 141, § 2, 36 Stat. 926 (codified at 43 U.S.C. § 524 (1982)).
98. Roos-Collins, *supra* note 80, at 839.

customer. Although approval of the Secretary of the Interior is generally required prior to the transfer of Bureau water,[99] the Bureau has not promulgated regulations that identify the criteria for granting such approval. As a result, a case-by-case system has evolved for Bureau approval of water marketing proposals. Despite the uncertainties inherent in such an approach, a number of successful transfers involving Bureau rights have been reported.[100]

Much of the complexity involved in transfers of Bureau rights arises from confusion concerning the nature of the relationships between the various parties, the ownership of the water rights, and the source of governing law.[101] Resolution of many issues turns on the terms of contracts for the use of Bureau water. As a result, generalizations in this area are difficult. The key legal issues are discussed briefly below.

a. Changes in Purpose of Use of Bureau Water

The marketing of Bureau water will typically involve transfers from irrigation users to municipal and industrial (M&I) users. Whether, and to what extent, Bureau water can be transferred from one use

---

99. Most Bureau contracts explicitly require Secretarial approval prior to an assignment of rights thereunder. In addition, the Reclamation Project Act precludes the delivery of water for irrigation until execution of "a repayment contract with the United States, in form satisfactory to the Secretary. . . ." 43 U.S.C. § 485h(d) (1982). Similarly, current contracts for State Water Project water require the approval of the Director of DWR before any exchange, sale or trade of the firm yield entitlements can be made. Section 15(a) of SWP Standard Contract.

100. *See* Driver, *supra* note 80, at 26-3 n.5; Roos-Collins, *supra* note, 80 at 859-73.

101. A leading commentator states:

> Any potential conveyance of a project right is currently burdened by the necessity of untangling the Gordian Knot of the relationship between the Bureau, a contracting district, and irrigators . . . .
>
> . . . .
>
> The confusion as to ownership of project water is due to the welter of laws and legal instruments that define the respective interests of the project operator and beneficiaries. The sources of definition are the Reclamation Act; state law, including the water, irrigation district, and fish and game codes, which the Reclamation Act incorporates into project governance if not inconsistent with congressional directives; contracts between the United States and the districts; and finally, the contracts and, in some instances, local bylaws regulating the relationship between the districts and the actual irrigators. Federal law (including the Reclamation Act's new specific mandates as to water use and the provisions of federal contracts) generally defines the obligations that the United States assumes and which the districts and the irrigators can expect the United States to satisfy; state laws provide the substance of the relationship between the districts and the irrigators, unless these laws frustrate the purposes of the Reclamation Act, including the requirement that all project water be put to beneficial use.

Roos-Collins, *supra* note 80, at 822 (citations omitted).

to another is a critical threshold issue in any marketing proposal involving Bureau water.

The original Reclamation Act provided only for the construction of irrigation works and authorized the Bureau to store and deliver water for irrigation only.[102] However, the Reclamation Project Act of 1939[103] authorized the Secretary to contract for water delivery to M&I customers after determining that the contract "will not impair the efficiency of the project for irrigation purposes."[104] In *Environmental Defense Fund v. Morton*,[105] the court held that the only relevant factors for this determination are "those which relate to the irrigation efficiency of the project. . . ."

In addition to the Reclamation Project Act, there are at least three "generic" federal statutes which may authorize the Secretary to enter into contracts to supply water for purposes other than those for which the project has been authorized.[106]

If the project as originally approved included provisions for M&I supply and the transfer would necessitate modifications involving "major structural or operational changes,"[107] then the Secretary must apply for and receive congressional approval for the "modification of a reservoir project authorized, surveyed, planned, or construed" prior to July 3, 1958.[108] There has been no judicial interpretation of the nature or extent of the modification required to trigger this requirement. When the original authorization included M&I supply as a project purpose, the Secretary may be able to rely on the alternative procedure established by the Reclamation Project Act and not seek congressional approval for a major allocation of project water to M&I customers.[109]

---

102. Reclamation Act of 1902, ch. 1093, § 2, 32 Stat. 387, 388 (current version at 43 U.S.C. § 411 (1982)).

103. 43 U.S.C. §§ 375a, 387-389, 485-485k (1982) (original version at ch. 418, 53 Stat. 1187 (1939)).

104. 43 U.S.C. § 485h(c) (1982).

105. 420 F. Supp. 1037, 1044-45 (D. Mont. 1976), *modified on other grounds sub nom.*, Environmental Defense Fund v. Andrus, 596 F.2d 848 (9th Cir. 1979). Despite the limited nature of the inquiry, the Secretary does not have unfettered discretion in approving an M&I contract; the decision is subject to judicial review under the Administrative Procedure Act, 5 U.S.C. §§ 701-706 (1982). *See* Arizona Power Pooling Ass'n v. Morton, 527 F.2d 721, 727 (9th Cir. 1975), *cert. denied*, 425 U.S. 911 (1976).

106. Driver, *supra* note 80, at 15-26.

107. 43 U.S.C. § 3906(d) (1982).

108. *Id.*

109. *See* Roos-Collins, *supra* note 80, at 792.

b. Changes in Place of Use of Bureau Water

The standards contained in the Reclamation Project Act of 1939 for the approval of transfers of Bureau water to M&I uses apply only to M&I uses within project boundaries; when the transferee seeks to supply water to M&I customers outside of project boundaries or from a project authorized only for irrigation, the Bureau must satisfy more stringent conditions.[110] Under the Miscellaneous Water Supply Act of 1920[111] three conditions must be met before Bureau water may be supplied for non-irrigation uses outside project boundaries: (i) the Secretary has obtained the approval of the irrigators' associations; (ii) the Secretary has made an advance showing that there is "no other practicable source of water supply for the [non-irrigation] purpose;" and (iii) the delivery will not be "detrimental to the water service for such irrigation project, nor to the rights of water service for such irrigation project, nor to the rights of any prior appropriator."[112]

Statutes authorizing reclamation projects typically fail to delineate project boundaries with any degree of specificity.[113] Absent specificity in the authorizing statute, the Reclamation Act provides that the Secretary has discretion to establish project service boundaries.[114]

The Reclamation Act does not include any standards or criteria which the Secretary must follow in establishing project boundaries. If the transferee of Bureau water is outside the broad geographic area of the project authorized by Congress, the transfer will likely be unlawful unless project authorizing legislation is amended or the transfer can meet the requirements of the Miscellaneous Water Supply Act of 1920. If, on the other hand, the transferee is within the broad geographical area authorized by Congress, the transfer can probably be effected without returning to Congress.[115]

---

110. Roos-Collins, *supra* note 80, at 795.
111. 43 U.S.C. § 521 (1982) (original version at ch. 86, 41 Stat. 451 (1920)).
112. 43 U.S.C. § 521 (1982). The applicability of these standards to M&I customers located outside project boundaries in situations where Congress authorized both irrigation and M&I uses is not free from doubt. Roos-Collins, *supra* note 80, at 798. The prevailing view, however, is that the three requirements would apply. *Id.*
113. *See* Driver, *supra* note 80, at 18-26.
114. 43 U.S.C. § 373 (1982).
115. *See* Driver, *supra* note 80, at 26-19.

c. Who Has the Right to Transfer Bureau Water?

The issue of who has the right to transfer Bureau water turns on a case-by-case analysis of the relationship between the Bureau, the contracting district, and the end-user of the water. Difficult issues of contract interpretation and real property law concerning the ownership of Bureau water rights will typically be raised. Also involved will be issues concerning the relative applicability of state versus federal law.

As noted above, the end-users of Bureau water (typically farmers) hold the primary beneficial interest in a reclamation project's water supply, even though the end-user typically does not have a contract with the Bureau.[116] In general, the Reclamation Act does not expressly define the relationship between the end-users and the district that has contracted with the Bureau. Accordingly, the district's contracts with its members, the district's bylaws and applicable state law will generally determine the share of project water each end-user receives, as well as the rights of the end-user to transfer such water.[117]

The rights of end-users of Bureau water to transfer their contractual entitlements is an issue that will likely receive considerable attention in the coming years.[118] Generalizations are difficult in this area, due to the importance of examining pertinent contractual provisions, as well as provisions of district bylaws and authorization statutes. The complexity of this area has led one commentator to observe that "[a]s between an irrigation district and an individual member, the member's conveyable project right is what the district, or what a court in a proper proceeding, says it is."[119]

---

116. *See supra* notes 84-87 and accompanying text.

117. Roos-Collins, *supra* note 80, at 849.

118. An example is the recent proposal by the Berrenda Mesa Water District, a member of the Kern County Water Agency (KCWA), to sell 50,000 acre-feet of its State Water Project entitlement outside of Kern County, if a sale cannot be arranged with another KCWA member agency. Under the water supply contract between the KCWA and the Berrenda Mesa Water District, Berrenda Mesa cannot transfer any water received under the contract outside the District without receiving approval from KCWA. In turn, KCWA must obtain approval from DWR before transferring any water received under its SWP contract. KCWA has taken the position that transfers of SWP entitlements under the KCWA contract should be limited to buyers and sellers within Kern County. In addition, there are important issues of facility repayment and use of facilities to the extent that any water that may be sold outside Kern County requires use of SWP facilities. *See DWR Catalog*, *supra*, note 14, at 9.

119. Roos-Collins, *supra* note 80, at 850.

d. *Profit From Marketing of Bureau Water*

As a practical matter, the marketing of Bureau water will not occur without some allowance for the retention of profits by the transferring party. The Reclamation Act does not expressly establish the amount of private profit allowable from the voluntary transfer of a right to Bureau water, with the exception of a conveyance involving a contract under section 1 of the Warren Act.[120] However, individual water service contracts may place limitations on the profitability of Bureau water resales.[121]

Several commentators have suggested the development of an administrative policy that allows transferrors to retain some profit (above that created by continued irrigation).[122] Part IV of this article briefly examines the profit issue.

D. *Barriers Arising from Restrictions on Transfer of District Water*

Local water districts and agencies play an integral role in California's water distribution system. These public entities, which take a wide variety of legal forms, typically purchase wholesale water from other water agencies or develop their own water supplies (or some combination of the two) and then supply water to end-users. It is estimated that there are nearly 1000 public water districts in the state.[123] About 900 of these districts were formed under 40 general water district acts and the remainder were created by the Legislature by special acts.[124]

---

120. Section 1 of the Warren Act provides that a contractor thereunder "shall [not] make any charge for the storage, carriage, or delivery of such water in excess of the charge paid to the United States except to such extent as may be reasonably necessary to cover cost of carriage and delivery of such water through their works." 43 U.S.C. § 523 (1982).

121. Driver, *supra* note 80, at 26-29. An additional potential restriction on the valuation of appropriative water rights arises under Sections 1392 and 1629 of the Water Code, which provide that valuation of appropriative rights may not be "in excess of the actual amount paid to the state" for the permit or license. There are no reported decisions on those two provisions and their restrictions apparently have not been enforced. *See* GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 69.

122. *See, e.g.*, Roos-Collins, *supra* note 80, at 860; Driver, *supra* note 80, at 26-30.

123. *See* PHELPS, MOORE & GRAUBARD, EFFICIENT WATER USE IN CALIFORNIA: WATER RIGHTS, WATER DISTRICTS AND WATER TRANSFERS 8 (Rand Corporation Report R-2386-CSA/RF Nov. 1978) [hereinafter RAND REPORT].

124. *Id.*

Many districts have contractual arrangements with federal and/or state agencies (typically the Bureau or DWR) to purchase additional water. The authority of general act districts to contract with the Bureau stems from the Irrigation District Federal Cooperation Act of 1917.[125] Special act districts typically have parallel authority. Although not always specified in district law, essentially all water districts also assert authority to contract with the State as well.[126]

Commentators have suggested that there are two basic mechanisms to improve the efficiency of use of district-controlled water through market-type incentives. One is "to modify—by statute if necessary—the water pricing rules of local water districts and other agencies to achieve marginal cost pricing."[127] A discussion of the intricacies of marginal cost pricing is beyond the scope of this article.[128] The second is "to enhance the transfers of water, particularly across water district lines."[129] This brief discussion will focus on how transfers of district water might be facilitated.

There are two basic situations in which a water district may seek to transfer water out of the district. The first is when the transferring district has "surplus" water, that is, water rights or contractual entitlements beyond the needs of district customers at current prices. The second is when the transferring district must obtain water for transfer by inducing reductions in use within the district.

Most general and special district acts restrict the sale of district water outside district boundaries to "surplus" water, that is, water not necessary for use within the district.[130] These provisions can be a significant barrier to the marketing of district-controlled water.[131]

The decision whether to transfer non-surplus water outside district boundaries should be a local one, to be made by the governing bodies of local districts with the advice and consent of their constituents.[132] There are situations, however, in which the short-term or long-term transfer of non-surplus water may be in the best economic

---

125. CAL. WATER CODE §§ 23175-23302 (West 1984). Under this Act districts may call for an election to approve contracts and may levy assessments to meet their contractual obligations. *Id.*

126. RAND REPORT, *supra* note 123, at 10.

127. *Id.* at 17.

128. *See* RAND REPORT, *supra* note 123, at 19-28 (discussing marginal cost pricing in water districts).

129. *Id.* at 18.

130. *See* CAL. WATER CODE § 22259 (irrigation districts) (West 1984); CAL. WATER CODE APP. 109-33 (West Supp. 1978) (Metropolitan Water District).

131. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 68.

132. *Id.*

interest of a district and its customers.[133] One way to facilitate such transfers is to remove export restrictions from all general and special district acts.[134]

III. Past Legislative Attemtps to Encourage Water Marketing

In its Final Report, the Governor's Commission to Review California Water Rights Law recommended twelve changes in existing water rights law, administrative practice, and water supply institutions, in order to increase the efficiency of water use.[135] Since the Commission's Report was issued in 1978, the legislature has adopted some, but not all, of the Commission's recommendations. Aside from the Commission recommendations, the legislature has adopted a broad array of statutes that seek to encourage water marketing. This part of the article examines these past legislative actions.

State legislative attempts to encourage water marketing can be divided into three categories: (1) changes in water rights law, which seek to clarify or amend rules governing the sale, transfer, lease, or exchange of water and water rights; (2) changes in SWRCB and DWR administrative functions, which seek to create mechanisms at the state level to administer and facilitate water marketing plans;[136] and (3) changes in the rules governing water supply and delivery institutions, including both local water districts and statewide or regional water purveyors, which seek to encourage such institutions to take part in water right transfers. As discussed in greater detail below, the legislature has adopted all of the reforms recommended by the Governor's Commission in category (2), and all but one of the suggested changes in category (1).[137] However, it has not adopted

133. In a 1985 report, the Assembly Office of Research (AOR) examined a hypothetical transfer of water from the Modesto and Turlock Irrigation Districts to the Kern County Water Agency. The Report concluded that if such a transfer would be effected in quantities large enough to be attractive to the importer, but small enough so as to have a minimal effect on the agricultural practice of the exporters, the transfer would be "physically possible and economically beneficial to both the importers and exporters." California Assem. Office of Research Report, *Water Trading—Free Market Benefits for Exporters and Importers* 31 (1985) [hereinafter *1985 AOR Report*]. The author does not necessarily advocate the hypothetical transfer examined by AOR. The AOR Report serves, however, as an example of the feasibility analysis that would precede any out-of-district transfer.

134. The Governor's Commission recommended such a change. Governor's Commission Report, *supra* note 6, at 68.

135. Governor's Commission Report, *supra* note 6, at 57-72.

136. *Id.* at 71-72.

137. The Commission's recommendations, found on pages 71 and 72 of its Final Report,

the category (3) institutional changes recommended by the Commission. The lack of institutional reform has limited the development of water marketing in California. The legislative changes are discussed chronologically below.

A. Early Water Marketing Legislation

The first of the Commission's recommendations to be enacted was a change in water rights law, which modified the traditional forfeiture rules of the prior appropriation doctrine. Previously, an appropriator who did not take all of the water to which he was entitled ran the risk of losing the right to the unused water.[138] Legislation enacted in 1979 protects an appropriator's rights to water which remains unused due to conservation efforts.[139]

Legislation enacted in 1980 established "[t]he voluntary transfer of water and water rights" as the policy of the state in cases "[w]here [it is] consistent with the public welfare of the place of export and the place of import."[140] The transferability of water rights was explicitly recognized as a way of increasing the efficiency of water use.[141]

Although the transfer of water or a water right to another on a temporary basis does not constitute nonuse and thus does not, in itself, place the right in jeopardy of forfeiture,[142] forfeiture has been a common fear.[143] To insure legal protection for the participants in a transfer and to provide a statutory pronouncement of the transferability of water and water rights, the new statute contained a provision which specified that "[t]he sale, lease, exchange, or transfer of water or water rights, in itself, shall not constitute evidence of waste or unreasonable method of use . . . [or] . . . diversion. . . ."[144]

---

and numbered 1 through 12, can be placed into the three categories in the following manner: (1) Water rights: recommendations 3, 5, 7 and 11; (2) Administrative: 8 and 9; and (3) Institutional: recommendation 10. Recommendations 1, 2, 4, 6, and 12 are not directly applicable to water marketing. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 71-72.

138. CAL. WATER CODE § 1241 (West Supp. 1988).

139. CAL. WATER CODE § 1011 (West Supp. 1988). While this legislation ended a policy that tacitly encouraged waste, it did not create an *incentive* for all right holders to reduce their consumption. The need for an economic incentive exists both to encourage conservation and because conservation efforts generally require some investment of capital or labor. Even in cases where conservation occurs because of inaction (for example, allowing a field to lie fallow), there is an opportunity cost for pursuing that option.

140. CAL. WATER CODE § 109 (West Supp. 1988).

141. *Id.*

142. Stevinson Water Dist. v. Roduner, 36 Cal. 2d 264, 270, 223 P.2d 209, 212-13 (1950).

143. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 66.

144. CAL. WATER CODE § 1244 (West Supp. 1988).

In 1980 the legislature also granted the operators of wastewater treatment plants the exclusive right to use treated wastewater effluent.[145] The Governor's Commission suggested this as a way of encouraging the sale and distribution of treated wastewater. To this end the Commission defined the rights of wastewater suppliers, thereby reducing the number of parties with claims to the resource.[146] However, plant owners can only maintain an exclusive right to this water against appropriators in cases where the water is introduced into the watercourse with the previously stated intention of enhancing instream beneficial uses.[147]

Another change in water rights law adopted in 1980 was the creation of a streamlined process for transfers lasting a year or less, when the transfer is limited to the permittee's or licensee's consumptive use of water.[148] Transfers which meet these criteria are termed "trial transfers" and SWRCB approval is not required before effecting any changes necessary for the transfer in point of diversion, place of use, or purpose of use. Instead of SWRCB approval, the applicant must notify the Board thirty days before altering any aspect of its diversion or use. Notice consists of identifying the parties involved in the transfer, the amount of water used consumptively, and the purpose of the transfer.[149] If the SWRCB does not object, the trial transfer may take place along with any necessary changes in point of diversion, place of use, or purpose of use.[150] If the Board objects to the changes, the statute calls for public notice, followed by a hearing on the application.[151] The Board is empowered to grant a trial transfer for up to one year if it finds that "substantial injury to any legal user of water is unlikely to occur, that such a transfer would not unreasonbly affect fish, wildlife, or other instream beneficial uses, but that the precise effect of the transfer on other legal users or instream beneficial uses is difficult to determine in advance of such a transfer.[152]

---

145. *Id.* § 1210.
146. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 63-64.
147. CAL. WATER CODE § 1212 (West Supp. 1988).
148. *Id.* §§ 1725-1727.
149. *Id.* § 1726.
150. *Id.* § 1728. Significantly, Water Code section 1730 exempts such changes from the requirements of the California Environmental Quality Act, California Public Resources Code sections 21000 through 21193, where the SWRCB does not object to the proposed temporary change. *Id.* § 1730.
151. CAL. WATER CODE § 1735 (West Supp. 1988).
152. *Id.*

B. 1982 Legislation

The water marketing legislation adopted in 1979 and 1980 did not spur a water marketing bonanza. As a result the Assembly Office of Research (AOR) conducted a study in 1982 into previous, existing, and potential water marketing activity in the State. The subsequent report analyzed federal and state transfer activities during the 1976-1977 drought, ongoing water transfers, and the potential for increased transfers.[153] The report also made a series of recommendations for additional legislation.

In 1982, the legislature adopted the AOR Report's proposals regarding water rights and water rights administration. However, the legislature stopped short of adopting its recommendations concerning statewide water distribution institutions, and AOR's proposal regarding local/regional institutions was substantially modified before being enacted. The 1982 legislation is discussed below.

The 1982 legislation made one significant change in water rights law and administration. Building on previous legislative attempts to encourage conservation[154] and use of reclaimed and polluted water,[155] the 1982 legislation clarified the right to sell, trade, and transfer water "the use of which has ceased or been reduced as the result of the use of reclaimed or polluted water . . . ."[156] Under the new rules such water "may be sold, leased, exchanged, or transferred pursuant to any provision of law relating to the transfer of water or water rights . . . ."[157]

The technical nature of water marketing transactions and the fact that there are few organizations with the resources and expertise necessary to assist potential water marketers are also addressed in the 1982 legislation. The SWRCB, DWR, and any other "appropriate state agencies" were directed to "encourage voluntary transfers of water and water rights, including, but not limited to, providing technical assistance" to potential transferrors.[158]

The 1982 legislation also creates an expedited process for changes in points of diversion, place of use, or purpose of use where such

153. California Assem. Office of Research, *A Market Approach to Water Allocation* (1982) [hereinafter 1982 AOR Report].
154. CAL. WATER CODE § 1011 (West Supp. 1988).
155. *Id.* § 1010.
156. *Id.* § 1011(b).
157. *Id.* § 1010(b).
158. *Id.* § 109(b).

changes are in response to an emergency situation.[159] The petitioner who has "urgent need"[160] for a temporary change order is not required to comply with the procedural requirements of a change petition.[161] However, such a change can only be made upon a finding by the SWRCB that it "may be made without injury to any other lawful user of water."[162] Also, although the SWRCB may designate a SWRCB employee to implement these functions, the SWRCB itself is to validate any change order issued. Significantly, under the trial transfer statute,[163] an applicant for a change of point of diversion, place of use, and purpose of use permit may not apply for an urgency change under these provisions.[164]

The 1982 legislation also adopted changes affecting local and regional water supply institutions. As noted previously in this article, the Governor's Commission recommended in 1978 that provisions in existing general and special district acts, which restrict the sale of district water outside district boundaries to "surplus" water, be repealed.[165] The AOR Report followed this recommendation, and legislation was proposed in 1982 to implement this policy. The legislation that was ultimately adopted in 1982 ostensibly retains the "surplus only" feature of pre-existing law.[166] But whereas previous law[167] provided districts with broad discretion to develop their own definition of "surplus," the 1982 legislation specifically enumerates three ways to define "surplus."[168]

C. *1986 Legislation*

Again, the legislation adopted in 1982 failed to spawn widespread water marketing. And once again the Assembly Office of Research

---

159. *Id.* § 1435.
160. California Water Code section 1435(c) states:
> "Urgent need," . . . means the existence of circumstances from which the board may in its judgment conclude that the proposed temporary change is necessary to further the constitutional policy that the water resources of the state be put to beneficial use to the fullest extent of which they are capable and that waste of water be prevented; except that the board shall not find a petitioner's need to be urgent if the board in its judgment concludes, if applicable, that the petitioner has not exercised due diligence either (1) in petitioning for a change pursuant to provisions of this division other than this chapter, or (2) in pursuing that petition for change.

Id. § 1435(c).
161. CAL. WATER CODE § 1435(a) (West Supp. 1988).
162. *Id.* § 1435(b)(2).
163. *Id.* § 1725.
164. *Id.* § 1442.
165. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 68.
166. CAL. WATER CODE § 382 (West Supp. 1988).
167. *Id.* § 22259.
168. *Id.* § 383 (West Supp. 1988).

was asked to examine certain issues relating to water marketing. The resulting report[169] gave rise to another round of water marketing legislation in 1986. This legislation is discussed below.

In 1986, the legislature made several changes in California's most important statewide water supply and delivery institution, the Department of Water Resources. The legislature's aim was to modify the mandate, organization, and role of DWR and to make it a source of information on water marketing.

Prior to 1985, there was no statutory requirement that DWR make its unused aqueduct capacity available either to its contractors or to other parties taking part in water marketing transactions.[170] As a result, legislation was adopted in 1986 which requires state and local public agencies to provide up to seventy percent of their unused conveyance capacity to public agencies which wish to effect transfers.[171] The legislation requires the transfer to meet conditions regarding the priority of long-term contract holders, emergency needs for facility capacity, impairment of water quality, and prevention of injury to legal users or fish and wildlife and other instream uses.[172]

This legislation is an example of an attempt to reform water distribution institutions. It applies both to statewide and to local and regional water supply and delivery institutions.[173] The legislation seeks to encourage, and in some instances requires such institutions to take part in water marketing.

DWR's mandate was also affected by 1986 legislation which requires it to discuss with the Bureau of Reclamation the possibility of contractors with federal water entitlements being allowed to transfer their entitlements to irrigation, environmental protection, and

---

169. *1985 AOR Report*, *supra* note 133, at 62-63.

170. Contracts for State Water Project water may, however, require DWR to make state facilities available under certain circumstances. *See 1985 AOR Report*, *supra* note 133, at 62-63. AOR opined that under California Water Code section 109(b), which directs DWR to "encourage voluntary transfers of water," it was arguable that DWR was required to provide conveyance facilities. *Id.* This general provision, however, is far short of an explicit mandate.

171. CAL. WATER CODE §§ 1810-1814 (West Supp. 1988). This legislation also dealt with the situation highlighted by David Houston, the regional director of the Mid Pacific Region of the United States Bureau of Reclamation. According to Mr. Houston, "we [the Bureau and DWR] are effective monopolies because we are the only ones with the conveyance systems capable of transferring large amounts of water to different areas of the state." Written Remarks to the Public Policy Program, UCLA Extension, in Santa Monica, California: Buying and Selling Water in California: Does it Fit into the State's Water Policy Portfolio?, DWR, MWD, San Francisco Foundation, U.S. Bureau of Reclamation, at 11 (Feb. 27-28, 1986) (on file at the *Pacific Law Journal).*

172. CAL. WATER CODE § 1810 (West Supp. 1988).

173. *Id.*

domestic uses during periods of low water supply.[174] DWR is also to negotiate with the Bureau on behalf of SWP contractors for additional water from federal sources.[175]

The 1986 legislation also requires DWR to establish "an ongoing program to facilitate the voluntary exchange or transfer of water" which has already been developed, diverted or which has been conserved.[176] To achieve this, DWR is to collect and make available information on the physical facilities which can be used for transfers and to list possible water transfer lease and exchange partners.[177] DWR is also required to produce a "Water Transfer Guide"[178] which contains information on state and federal laws pertaining to water marketing, a listing of agencies involved in or which may be of help to water transferors, information on identifying and mitigating third party effects, and a description of the services which the DWR provides to water users.[179]

IV. The Future of Water Marketing in California

As noted above, it is unlikely that a true commodity-type market for water rights will arise in California. There are a number of reasons for this, most significantly the legal complexities inherent in any water marketing proposal. On a broader level, there seems to be no general political consensus that the widespread transfer of water from agricultural to municipal and industrial use is a wise policy. The crux of the policy debate is the issue of whether economic factors alone should determine how water resources are allocated in this State. As one leading commentator has said, "[t]he notion that the economically most productive uses of water resources are necessarily the best ones is a difficult one to accept."[180]

Nonetheless, water marketing can and should contribute to California's mix of water resource management tools. This contribution will be especially important where water marketing is coupled with the development of new technologies, such as wastewater reclamation and salvage projects. Another area in which water marketing is likely

174. *Id.* § 10009.
175. *Id.* § 10008.
176. *Id.* § 480.
177. *Id.* § 481.
178. *Id.* § 482.
179. *Id.*
180. Dunning, *Reflections on the Transfer of Water Rights*, 4 J. Contemp. L. 109, 110 (1977).

to make significant contributions is in ensuring drought-year emergency supplies for muncipalities.[181]

Although past legislative attempts to encourage water marketing in California have been largely ineffective, there is a role for future legislation. Hopefully, the objectives of future legislation will be less grandiose than in the past. What is needed is a more focused legislative inquiry into the root barriers to water marketing in this State; a pragmatic approach to the elimination of unnecessary barriers; and a recognition that some barriers to water marketing serve important functions in the administration of water rights in this State. Discussed below are four areas in which additional legislation should be considered.

A. Refinement of the "No Injury" Rule and Definition of the Amount of Water Available for Transfer

As noted above, the Water Code does not define "injury" as used in the "no injury" rule; based on the language of the statute, if there is any injury to a legal user, regardless of how small the injury might be, the SWRCB must deny the petition for change.[182] A first step in the refinement of the "no injury" rule should be modification of the standard to one of "substantial injury," as recommended by the Governor's Commission.[183]

Beyond the adoption of a "substantial injury" standard, legislation is needed to give the SWRCB express authority to impose a "physical solution"[184] whereby the injured user can be compelled to accept a substituted source of water, or a modification of her means of diversion, distribution or use of water, at the transferring party's expense. Other western states have adopted similar legislation.[185]

---

181. The drought of 1976-1977 demonstrated how water sharing and water exchanges can be utilized to provide emergency supplies. A well known example is the interconnection made to provide water-short Marin County emergency supplies in 1977 from surplus water available in the Colorado River. This successful interconnection involved the cooperation of a large number of water agencies throughout the state. *See* DWR Bulletin 160-87, *supra* note 1, at 51-52.

182. *See supra* notes 31-33 and accompanying text.

183. *See supra* note 32 and accompanying text.

184. *See supra* note 39 and accompanying text.

185. Colorado, for example, authorizes the imposition of terms and conditions to prevent injury in connection with transfers. Colo. Rev. Stat. § 37-92-305(4). The statute provides that such terms and conditions may include:

> (a) A limitation on the use of the water which is subject to the change, taking into consideration the historic use and the flexibility required by annual climatic differ-

In addition to refining the "no injury" rule, future legislation should clarify the quantity of water available for transfer. This should be accomplished by defining the transferable right in terms of consumptive use during a specified period prior to the transfer.

Finally, future legislation should address comprehensively the issue of rights to "salvage" water—water saved by the implementation of conservation measures. How to define "salvage" water will be a controversial, but critical, first step. To protect those legal users who rely on seepage and return flow water, "salvage" water should be limited to water saved from loss due to evaporation, evaportranspiration or significant impairment of quality.[186] Future legislation should adopt the recommendation of the Governor's Commission that salvagers "be granted a right to the water they have salvaged superior to all users along the stream."[187]

B. Protecting Areas of Origin

The uncertainties created by California's area of origin statutes are a potentially significant barrier to water marketing in this State. Nonetheless, there are sound policy reasons why area of origin protections should accompany any water marketing proposal.[188] What is needed is a mechanism for requiring the exporter to fully compensate the area of origin for all costs associated with the transfer. The key issue, of course, is how to determine the quantity and form of compensation. Legislation for the compensation of areas of origin should proceed from the premise that *all* losses caused by the transfer should be counted as costs of the project.[189] According to two leading commentators, losses to the area of origin are likely to take four main forms:

---

ences;
(b) The relinquishment of part of the decree for which the change is sought or the relinquishment of other decrees owned by the applicant which are used by the applicant in conjunction with the decree for which the change has been requested, if necessary to prevent an enlargement upon the historic use or diminution of return flow to the definement of other appropriators;
(c) A time limitation on the diversion of water for which the change is sought in terms of months per year;
(d) Such other conditions as may be necessary to protect the vested rights of others.

Id.

186. *See supra* note 40 and accompanying text.
187. GOVERNOR'S COMMISSION REPORT, *supra* note 6, at 61.
188. *See supra* notes 75-76 and accompanying text.
189. MacDonnell & Howe, *supra* note 52, at 542.

> (1) Current and future losses of net income directly associated with *diversions and consumptive uses* that are curtailed because of a water transfer; (2) current and future losses of *instream* values; (3) losses of incomes in activities *economically linked* to those diversions and instream values; and (4) losses which accrue to society at large in the area of origin.[190]

In determining the cost of a transfer project, it will be necessary to forecast future uses of water in the area of origin and the net economic benefits of such future uses. It will then be necessary to equate these future net benefits to present value for purposes of determining compensation, through the process of "discounting."[191] Needless to say, such a process will be inherently subjective. Nonetheless, the legislature should investigate the feasibility of developing specific legislative guidelines for compensating areas of origin.[192]

C. The Need for Federal Water Marketing Policies and Guidelines

Because the federal government controls a significant portion of California's surface water resources,[193] federal policy toward water marketing will have a significant impact on the development (or

---

190. *Id.* (emphasis in original).

191. *Id.* at 544.

192. MacDonnell and Howe recommend the following six general economic guidelines for compensation:

> (1) Compensation paid should equal the present value of net incomes and public amenities lost in the area of origin that are not protected under conventional appropriation doctrine. The relevant categories of lost income and amenities are: (a) future net income that would be generated directly and indirectly in the basin by future diversion uses of currently unused waters; (b) current and future values and incomes directly and indirectly associated with instream uses; and (c) losses to the general public from deterioration of public services and quality of life.
>
> (2) Compensation should be restricted to construction of and funding for water storage. Payment should be made to agencies not faced with this constraint if possible, i.e. to units of general government.
>
> (3) Compensation should not aim at keeping the price of water in the basin of origin below its real scarcity value.
>
> (4) If water storage is the most efficient form of compensation from the area of origin's viewpoint, construction of the storage facilities should be delayed until they are actually needed. The proper payment would be the present value of the planning, filing, land acquisition, and construction costs.
>
> (5) The amount of compensation paid to losing parties should be based on the assumption that those parties will act rationally to adapt to the new water supply situation—that they will undertake all cost-effective steps to minimize their income losses in the face of diminished water supplies. Compensation should then equal the sum of these mitigation costs plus residual damages.
>
> (6) These principles should be applied to *all* out-of-basin transfers, regardless of the nature of the exporting agency.

Id. at 545-46.

193. *See supra* note 77 and accompanying text.

nondevelopment) of water marketing in California. To date, such policy has been virtually nonexistent.[194] Legislative and regulatory change is needed at the federal level if widespread water marketing involving Bureau water is to occur.

As discussed in Part II of this article, the key areas of uncertainty involving transfers of Bureau water are authorized project purposes, project service areas, and profit from transfers of Bureau water. With respect to the first two issues, legislation is needed to clarify the permissibility of changes in purpose or place of use of Bureau water. Such changes should, in general, be subject to standards parallel to the "no injury" standards imposed by state water law.

On the profit issue, the Reclamation Act does not clearly express a policy concerning the retention of profits from transfers of Bureau water associated with nonexcess land. As a result, the Bureau "has considerable discretion in determining whether to recapture some or all of the profit from the conveyance of a project right associated with nonexcess land."[195] Although distribution of the benefits of publicly developed resources to private individuals may carry negative political repercussions, the federal government can and should develop formulae which reduce the windfall associated with transfers of Bureau water.[196]

D. Institutional Changes

Local water districts in California have to date evidenced a cautious attitude toward water marketing. This is understandable, given the legitimate concerns that exist regarding impacts of widespread water marketing on areas of origin and other "transferring" regions, as well as the limitations on transfers typically imposed by water supply contracts. Nonetheless, there may be situations in which the short-term or long-term transfer of district-controlled water is in the best interest of a district and its customers. The decision of whether to participate in a transfer scheme should be made on a case-by-case basis and should be a local one.

---

194. The Bureau has candidly recognized that, "[f]rom a policy perspective, there is little or no policy on permitting transfers from project water users to other users." ASSESSMENT 87. . . . A NEW DIRECTION FOR THE BUREAU OF RECLAMATION 5 (1987).

195. Roos-Collins, *supra* note 80, at 857.

196. Roos-Collins suggests that "the Bureau could establish a rule limiting such windfall without eliminating a conveyor's profit, for example, by recapturing the difference between the actual cost of project water and the price the irrigator paid for service." *Id.* at 858.

To enable local water districts to participate in water marketing where it is desirable to do so, restrictions against export of non-surplus water in existing general and special district acts should be re-evaluated. In addition, mechanisms should be developed for the disbursement of profits arising from transfers; without provision for such profits water marketing will not, as a practical matter, be an attractive alternative for water districts.

V. Conclusion

Water marketing has the potential to make a significant contribution to California's water allocation system. Water marketing alone, however, is not the answer to all of the State's water supply needs. A greater appreciation of the complexities involved in implementing a water marketing plan is needed on the part of the legislature and the general public. Once these complexities are fully evaluated, additional legislative measures should be adopted to facilitate water marketing while at the same time protecting the legitimate interests of those who rely on existing patterns of water use.